

APPENDIX B

An Archaeological Clearance Survey
of

Eight Parcels of Land at the
Anaconda Company's Jackpile-Paguate Uranium Mine
Laguna Indian Reservation
Valencia County, New Mexico

Confidential Claim Retracted

Authorized by: SL

Date: 6/24/13

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JUN 25 1976

U. S. Geological Survey
Carlsbad, N. M.

By

John D. Beal
School of American Research

January 6, 1976



9404115

POL-EPA01-0004216

CONFIDENTIAL

DESCRIPTION OF SURVEY

On November 6, 7, 10, and 12, 1975, the School of American Research conducted archaeological clearance surveys of eight parcels of land at the Anaconda Company's Jackpile-Paguate Uranium Mine on the Laguna Indian Reservation, Valencia County, New Mexico. The survey was performed under Federal Antiquities Permit # 74 NM 063 and a permit from the Laguna Tribe covering only those lands within the mining lease. Dames and Moore, environmental consultants of Salt Lake City, Utah, requested that the School of American Research conduct the survey.

The areas surveyed are located within the Jackpile or Number Four Mining Leases of the Laguna Indian Reservation (T10N, R5W, Sections 1, 2, 3, 4, 5, 8, 9, 10, and 16; T11N, R5W, Sections 25, 26, 27, 33, 34, 35; and T10N, R5W, Sections 3, 4, and 5 as shown on the accompanying map). The proposed expansion of Anaconda's open pit and underground uranium mining operations will affect these areas.

Mr. William E. Gray of the Anaconda Company and Mr. John Beal of the School of American Research met at the Jackpile-Paguate Mine on November 3, 1975, for the purpose of defining the survey areas and obtaining clearance from mine personnel. Mr. Beal returned to the lease area on November 6, accompanied by Mr. Christopher Causey with whom he began an intensive survey of the designated areas. Ms. Jane Whitmore participated in the survey on November 12.

METHOD OF SURVEY

Each area was surveyed on foot in parallel linear transects with members of the survey team covering swaths of ground 50 feet in width (25 feet on either side of the line of passage). Crew members recorded signs of cultural activity, completed locational drawings of all site areas, made sketches of specific sites, and took complete sets of measurements. A small sample of ceramic materials (12 sherds) was collected at one site (A1-1). These materials, which were used in dating the site, will be returned to the Laguna Tribe. All prehistoric occupation sites were marked with yellow flagging tape, while historic occupation sites were left unmarked.

DESCRIPTION OF SURVEY AREA

The areas surveyed lie on either side of the Rio Paguete, a perennial stream joining the Rio San Jose four miles east of Laguna Pueblo. The topography of the area is "characterized by a succession of mesas and erosion valleys bounded by desert cliffs or long barren slopes: a type of landscape which results from arid climate erosion of horizontal rocks of diverse strength" (Dittert 1959; Fenneman 1931:318). The Jackpile-Paguete Mine lies eight miles due north of Laguna Pueblo where the Rio Moquino and the Arroyo Moquino merge with the Rio Paguete. These three watercourses drain a considerable portion of the Mount Taylor watershed which lies to the north and west. The Arroyo Moquino serves to drain the west side of Gavilan Mesa, the most prominent landmark in the immediate area.

The majority of the areas surveyed is marked by gently sloping, treeless, alluvial valleys which are cut by deeply entrenched arroyos and bordered by outcrops of caprock, components of the Mesaverde Formation. Only the westernmost parcel (#7) differed from this norm; there the foothills of Mount Taylor rise to a considerable height (7,400 feet) and concentrated growths of piñon and juniper provide cover over the exceedingly rocky soil.

Valley bottoms below the mesas are populated by various grasses and low shrubs. Isolated small junipers occur where the caprock ends or where micro-environmental conditions permit. Cacti and members of the yucca family are not abundant. In comparison, the steep hillsides and mesa tops are typified by growths of piñon-juniper, various grasses, fourwing saltbush, prickly pear, and mamillaria cactus.

Mining operations in the vicinity have caused considerable impact on the original topography. Open pit mining operations, ancillary roads, backfill dumps, and drill holes are by far the most dominant features in all areas.

ARCHAEOLOGICAL BACKGROUND

Neither the Laguna Indian Reservation nor the general Pagate area has ever been the subject of detailed archaeological investigation. While considerable work has been done to the south and west of the Laguna Reservation by A. E. Dittert (1949 and 1959), R. J. Ruppe (1953), and R. Wiseman (1974), their investigations deal with the Laguna area in a peripheral way. Some work has been done in the Pagate area, notably by Eastern New Mexico University under the direction of Cynthia

Irwin-Williams, and in the form of survey activities by Gerald Dawson; however, the results of their work have not been published. Despite the lack of data available, a brief profile of the area's prehistory can be made by synthesizing Dittert's, Ruppe's and Wiseman's observations together with the information gained from M. A. Beach in a personal communication. (Mr. Beach, who is presently at Grossmont College, El Cajon, California, participated in the activities of Eastern New Mexico University in the survey area.)

The earliest probable occupation in the area dates to the Cody Phase of the Paleoindian period. W. James Judge (1973) has documented a site of this horizon not more than 10 miles east of the Pagate area and north of the Rio San Jose. There is some evidence that materials of the Cochise culture have also been observed in the area (Beach pers. com.). In any event, it is probable that the area to the south and east of Pagate was the province of Paleoindian hunters and that increments of this population did enter and exploit the eastern foothills of Mount Taylor. The dates of these incursions may have ranged from 10,000 B.C. to 500 B.C. and to perhaps later. During the period 2500 B.C. to approximately 1 A.D., Archaic period hunters used the area. Their camps occurred on the benches and outcrops of the Mesaverde Formation below the high mesas (Beach pers. com.; Dittert 1959). Both the Paleoindian and Archaic occupations in the area are similar in their utilization of lithic tools and the location of their habitations above the valley floor. The high mesas were occupied by Basketmaker peoples, and documentation for White

Mound Phase Basketmaker III sites is well established by both Dittert and Ruppe in the district south of Laguna along ~~the Malpais~~ (Cebolleta Mesa Region).

Early pueblo settlements are documented (Dittert 1949, 1959; Ruppe 1953; Wiseman 1974) in the Cebolleta Mesa area south of Pagate as well as in the surrounding area. The occupational sequence for the Laguna area can be considered similar to that established by Dittert for the Cebolleta Mesa region as a whole (see Table 1).

Late Pueblo III settlement in the area was confirmed during the survey by the presence of black on white wares and White Mountain red wares (including Houck--an early polychrome) at a small site. Cubero Phase sites have been noted to the south of the survey area (Dittert 1959), and there is little doubt that similar sites exist in the more immediate vicinity. That the region was dominated both physically and economically by Acoma Pueblo was well documented by Coronado at the time of his entrance into New Mexico (Boulton 1971; Hammond and Rey 1940). In 1697/98, increments of population from the Rio Grande pueblos were resettled along the Rio San Jose east of its confluence with Acoma Creek where a small Acoman population was already living. In 1699, Governor Cubero visited the new settlement and named it San Jose de la Laguna. This was later shortened to Laguna or Laguna Pueblo in historic times.

Farming has figured prominently in Laguna's economic picture, and several small farming communities were established in favorable locations along the Rio San Jose and its tributaries. Pagate was one of these villages and is first documented as

Table 1

Prehistoric Occupation in the Cebolleta Mesa Region

<u>Cultural Periods</u>	<u>Dates</u>	<u>Pecos Classification</u>
Acoma Phase	1600-Present	Pueblo V
Cubero Phase	1400-1600	Pueblo IV (Late)
Kowina Phase	1200-1400	Pueblo III-Pueblo IV
Pilares Phase	1100-1200	Pueblo III
Cebolleta Phase	950-1100	Pueblo II
Red Mesa Phase	870-950	Early Pueblo II
Kiatuthlanna Phase	800-870	Pueblo I
White Mound Phase	700-800	Basketmaker III

Lobo Period	2500 B.C.-A.D. 700	Archaic
San Jose Period		
Cody Phase	10,000 B.C.-2500 B.C.	Paleoindian
Cochise Phase		

existent prior to 1849. The inhabitants of Laguna proved more receptive to animal husbandry, primarily sheep herding, than most pueblos of the day and, by 1754, were noted for their large herds. Herding continues to be the primary activity requiring land today although cattle have generally replaced sheep within the last 50 years.

ARCHAEOLOGICAL EVALUATION OF SURVEYED AREAS

The entire survey project was conducted with respect to eight specific survey areas, each of which will be dealt with individually in the following discussion.

Survey Area A1

An intensive survey of area A1 resulted in the delineation of 5 occupation sites, 4 of which are historic, apparently related to the husbandry of sheep, and one of which is a prehistoric pueblo site. An inspection of the sandstone bench above the pueblo site resulted in the discovery of an archaic lithic scatter. This site lies out of the survey area, but its presence does substantiate the geographic stratification of sites mentioned previously.

Site A1-1

This site occupies a low hummock of alluvial soil between the two arms of Gavilan Mesa which open to the northwest and the Arroyo Moquino. Several small junipers populate this rise and constitute the only trees in the area. Evidence of occupation extends for a distance of 100 meters along the crest of the hummock and consists of ceramic materials. Architectural indications of occupation (as shown on Site Plan 1) are: a single rectangular

rubble mound of masonry debris less than 3 meters square, a circular rubble mound 2 meters in diameter, 2 isolated fire hearths, and a possible pit structure.

The fact that the isolated hearths and possible pit structure are somewhat removed from the other site remains may indicate that the manifestation is multi-component in nature; i.e., pueblo and basketmaker. There were, however, no diagnostic basketmaker materials evident on the surface. The presence of Santa Fe, Socorro, and Esquevada painted wares in addition to Houck Polychrome tends to indicate occupational dates from 1250 to 1350 A.D.

Site Al-2

This site is located approximately 65 meters north northeast of site Al-1 abutting the first bench of caprock above the valley floor. A small alcove or rincon is located directly to the east of the feature and is supposedly the result of entrenchment of a small drainage in this area. The manifestation consists of a rounded "L" shaped wall (semi-circular) of unaltered, simple sandstone masonry. This wall, in conjunction with the caprock forms an enclosure roughly 3 X 4 meters square; the wall ranges from .30 to .75 meters in height.

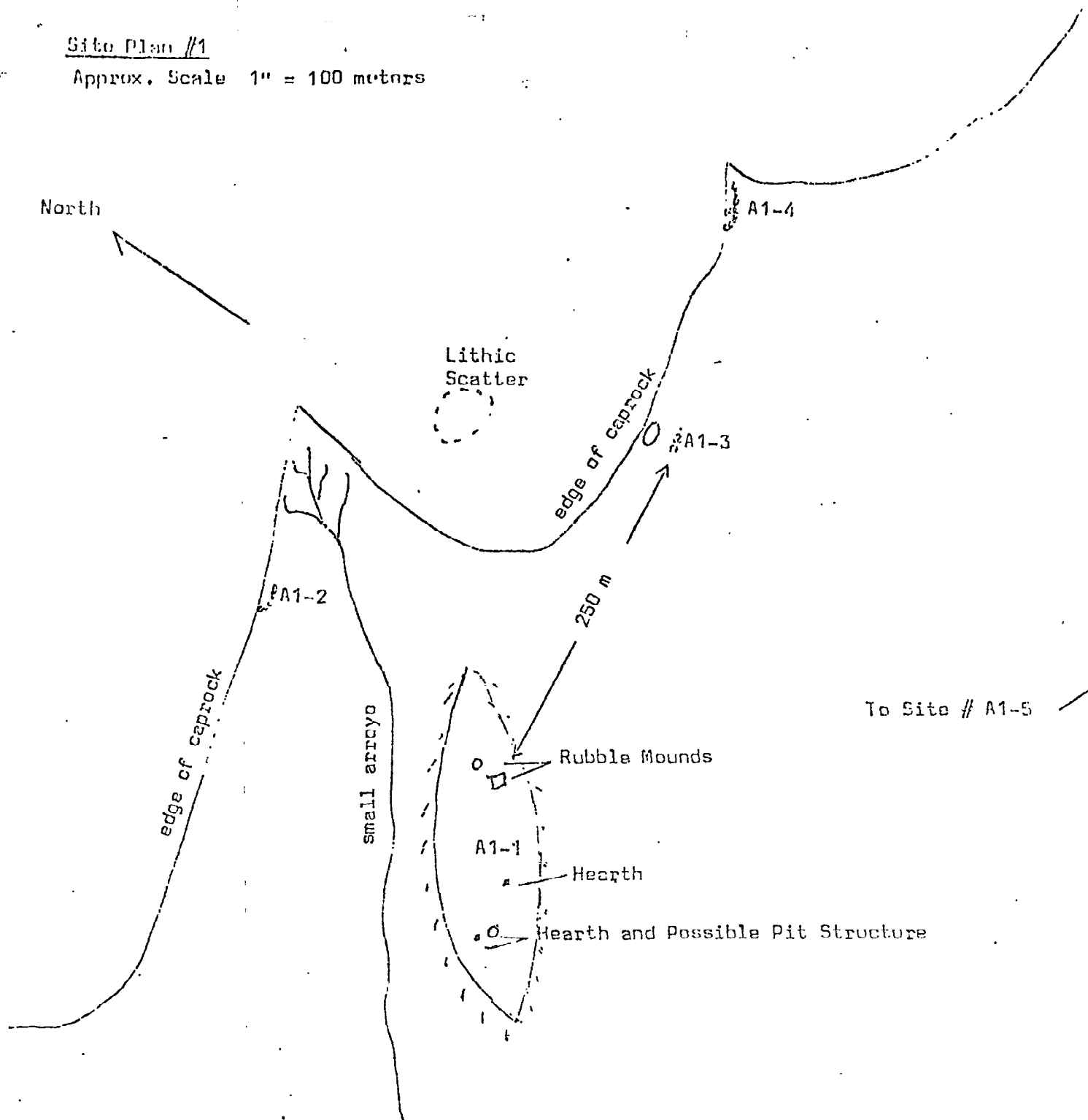
There is no indication that this feature is of prehistoric origin. Sheep dung and metallic trash around the site indicate that it is of historic manufacture and probably related to sheep herding activities in the area. Such a structure may well have served as a lambing pen or temporary herding shelter.

Site Al-3

Site Al-3 consists of a simple rock mound associated with

Site Plan #1

Approx. Scale 1" = 100 meters



isolated sandstone pillar along the rim of caprock 250 meters east of site Al-1. Unshaped sandstone slabs have been stacked in a single pile measuring roughly 2 meters in length, .75 meters in width and .60 meters in height. Although cultural material in the immediate area was nonexistent, the feature is believed to be of historic origin. The spatial relationship between the rock pile and the natural pillar may indicate that the rock pile is a marker of some type. Site Al-4 is located a short distance to the east in a small alcove, and some connection between the two is possible.

Site Al-4

A small alcove 50 meters to the east of Site Al-3 is the location of two concentric stone walls which are probably the remains of an historic shelter and a sheep pen. Both of these structures abut the first bench of caprock. The westernmost and smallest structure is composed of dry-laid coarse masonry which extends in an arc from northwest to southeast. At the northwestern extremity the stone wall abuts the cliff face and at the southeast end, abuts the west wall of a larger sheep pen. The smaller structure encompasses roughly 4 square meters of surface area, and the walls maintain a height of more than .50 meters. The larger structure (sheep pen) is constructed in similar fashion and of similar materials; however, it evidences signs of an entrance to the south (a breach in the wall) and encompasses 5 times as much surface area. The presence of sheep dung in the larger enclosure indicates that the features were used by shepherds running stock along the

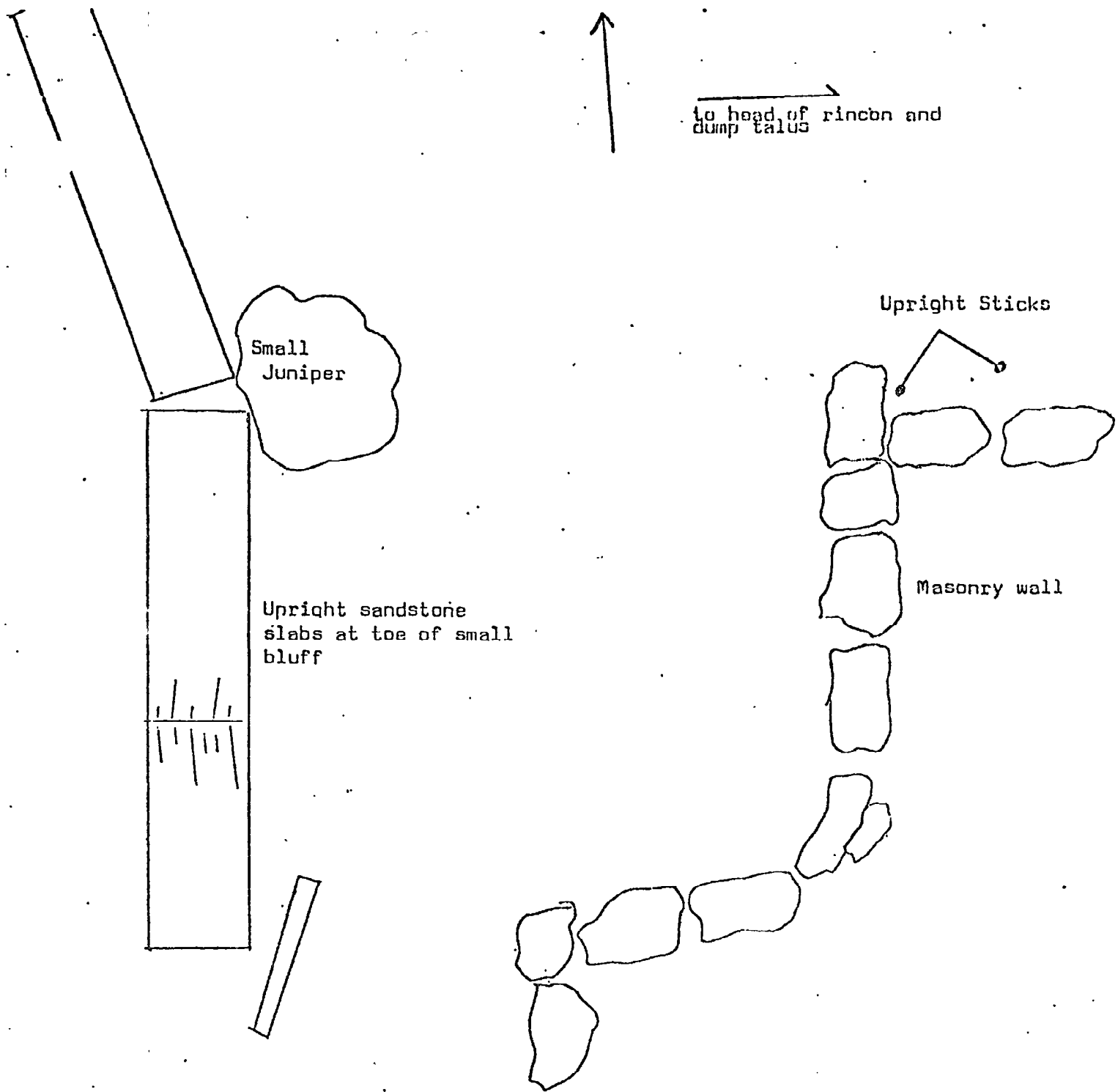
Arroyo Moquino. No metallic or glass materials were associated with the site.

Site Al-5

Site Al-5 is located 340 meters southeast of site Al-1 toward the head of the rincon and on the opposite side of the drainage. The site occurs at the toe of a small ridge which extends into the bottomlands. The site is bordered on the west by two large segments of sandstone slab marking the toe of the ridge and lodged in an upright or vertical position. Two meters to the east of these naturally erected stones is a rough "L" shaped wall of crude masonry without mortar. The alignment turns several 90 degree angles and is marked by two upright sticks embedded in the ground at the crux of the angles formed at its northern extremity. These sticks are of naturally peeled and weathered piñon pine, .03 meters in diameter and .35 meters in height above the ground. The wall itself ranges from .10 to .75 meters in height. The absence of any cultural material related to the site precludes any definitive assignment of cultural period; however, the similarity of construction to herding shelters and stock pens in the same area indicates historic origin. The structures' exact function and the significance of the two upright sticks at the north end of the structure are problematical.

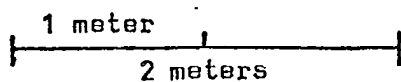
Survey Area A2

The survey of area A2 resulted in the documentation of two sites, both of which appear to belong to the historic period of occupation. The first is a series of six masonry alignments forming walls and partial enclosures, which may be the remains of an abandoned sheep camp. The second consists of the remains



Site #A1-5

Historic Herding Shelter or Wind Break



of a possible circular shrine or marker, evidently abandoned.

Site A2-1

Site A2-1 lies at the base of the first bench of caprock and consists of one "L" shaped windbreak or shelter on the south side of a small tributary drainage of the Arroyo Moquino, and three sections of masonry wall, a probable storage structure and a cairn on the north (as shown on site plan 2). Pertinent information for each of these structures is as follows:

Structure #1 Windbreak (temporary domicile?)

length of N-S wall 1.64 meters
length of E-W wall 1.74 meters
minimum wall height .28 meters
maximum wall height .85 meters
wall width .35 meters
Construction: Crude, coursed, simple masonry without mortar; vertical slabs at both ends of wall and at 90 degree juncture.

Structure #2 Sheep Pen

length of N-S wall 2.50 meters
length of E-W wall 9.0 meters
distance from edge of arroyo 1.50 meters
wall height .10-.85 meters
Construction: Crude, coursed, simple masonry without mortar; 90 degree abutment near arroyo is indistinct (washed out).

Structure #3 Storage Bin

diameter N-W 1.70 meters
diameter E-W 1.05 meters
wall height .25-.85 meters
Construction: Located under a small overhang of caprock; crude, coursed, simple masonry without mortar; circular.

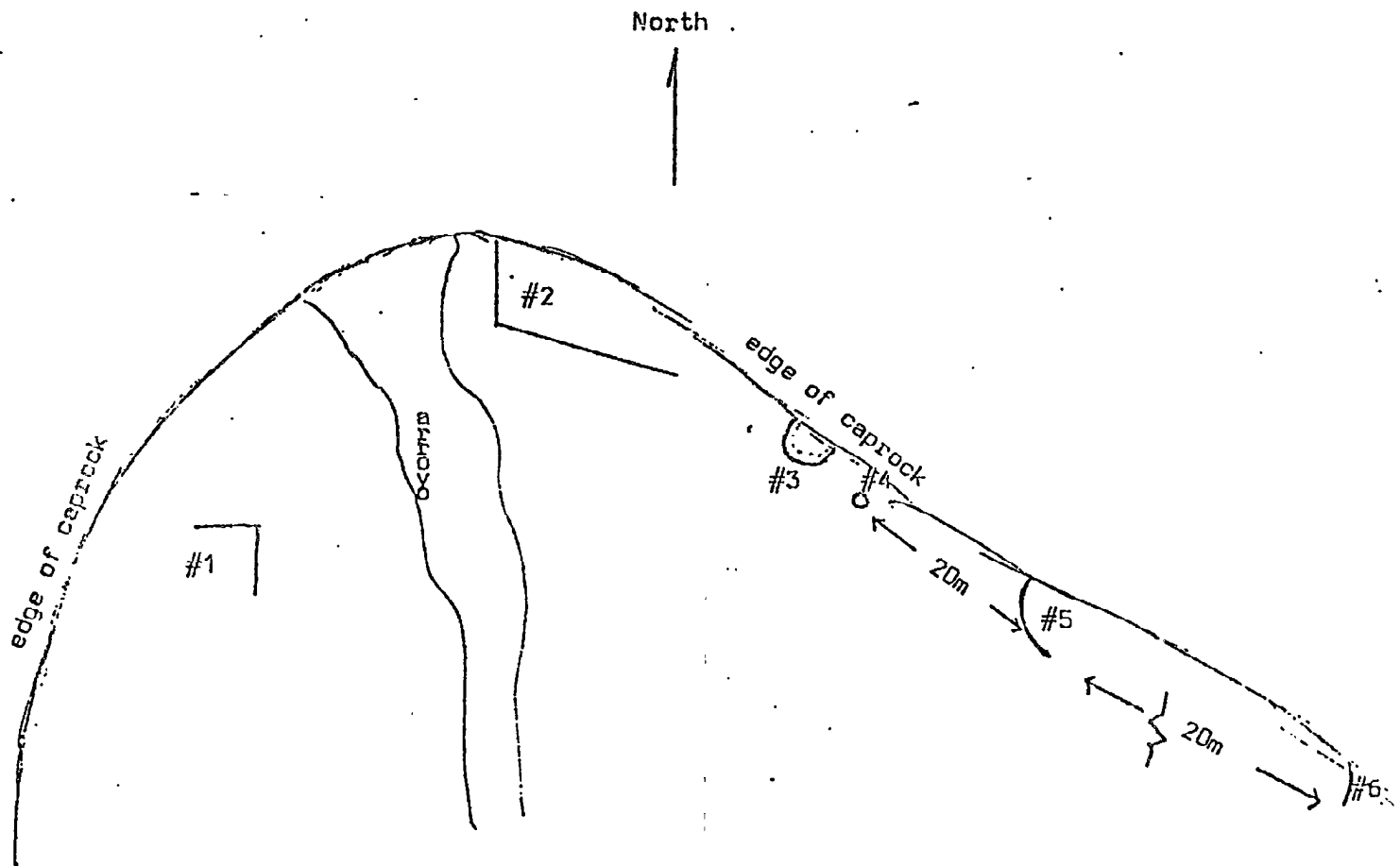
Structure #4 Cairn

height .55 meters
width .35 meters
Construction: 6 rocks piled on top of each other, general decrease in size.

Site Plan # 2

Site # A2-1

Approx. Scale: 1" = 5 meters



Structure #5 Windbreak or Lambing Pen

length of wall 2.25 meters
width of wall .40 meters
height of wall .48-.70 meters
Construction: Crude, coursed, simple masonry
without mortar; abuts the caprock
and is open to the southeast.

Structure #6 Storage (destroyed?)

length of wall 1.60 meters
height of wall 1.05 meters
Construction: Located in a small cleft in caprock;
large stones laid in crude courses
without mortar; 8 large rocks used
in wall segment.

It is generally apparent that these structures form a single site by virtue of their similarities of construction and proximity. A conversation with Mr. E. P. Scarracino of Paguate revealed that this general area was the scene of considerable herding in the 1920's and that some rather similar structures in the area were constructed then. It is probable that these structures relate to this period or before.

Site A2-2

This manifestation is located at the top of the caprock and 12 meters from its edge. It is also a short distance (40 meters) south of the Laguna Indian Reservation boundary. It consists of a semicircle of simple stone masonry 1.25 meters in length and from .12 to .48 meters in height. The feature is situated in such a way that the masonry wall functions as an extension of a circular depression in the surface of the caprock. When the depression and masonry wall are considered parts of the same entity, a circular area 1.80 meters in diameter is formed. No materials of cultural significance were observed in conjunction with the feature; however, no attempt to disturb the soil inside the feature was made. Judging from the location of the feature and its

form, it is probable that it served as either a shrine or marker.

Survey Area A3

No materials of archaeological or historical significance were documented for this area.

Survey Area A4

No materials of archaeological or historical significance were documented for this area.

Survey Area A5

No materials of archaeological or historical significance were documented for this area.

Survey Area A6

No materials of archaeological or historical significance were documented for this area.

Survey Area A7

No materials of archaeological or historical significance were documented for this area.

Survey Area A8

Three sites were located in this area, all of which were historic. The first (A8-1) appears to be a shrine area, while the second (A8-2) is an abandoned domicile. The third (A8-3) is a stock (goat) pen.

Site A8-1

This site is located on the east side of a small arroyo draining into Oak Canyon from the north and occupying a position in the center of the South Dump expansion. The site lies 20 meters southwest of the toe of the South Dump. A series of three stone cairns marks a pocket of deflation. Two additional stone cairns

are located to the north between the deflated area and the South Dump, and a single isolated cairn is located 25 meters to the southeast. The survey party was informed of the presence of a shrine in this general area, and it is assumed that this series of six cairns and the pocket of deflation is the one referred to. No cultural materials were associated with the immediate area of the cairns.

Site A8-2

Four hundred meters east of site A8-1 lies site A8-2 which consists of two mounds of masonry room rubble, a horno, a pile of wood chips, a small pocket of trash including chipped stone, glass and bottle caps and an iron stove. The presence of glass and metal tend to establish a recent date of occupation. The fact that no enclosures for stock are evident close to these ruins would tend to indicate that the features served primary domiciliary functions and were probably not related to temporary herding in the area; however, it is possible that site A8-3 is related to this site.

Site A8-3

Three hundred meters south of the east edge of the South Dump, along the edge of the caprock lies a single juniper branch and brush corral with metal watering trough. The corral is semicircular and situated to take advantage of the cliff face formed by the caprock. Dimensions are 15 X 8 meters, the back wall being formed by the cliff face. An entrance is located at the front of the corral (south southwest) and is 1.50 meters in width. The watering trough is located outside the enclosure and to the right of the entrance. Judging from the dung evident,

it is probable that the last occupants were goats.

RECOMMENDATIONS FOR CLEARANCE

The discovery of one prehistoric occupation site in the areas surveyed necessitates some action. The site has been directly impacted by the drilling of test holes in the vicinity and if further development of the area will result in additional surface alterations, mitigative steps will be necessary. Because this particular area is slated for underground mining, it is possible that further damage can be avoided if all surface alterations are restricted. It is suggested that this alternative be considered. The immediate area now receives little traffic, and it is probable that if this trend can be continued, there will be little or no impact on the site.

The numerous historic sites in areas A-1, 2, and 8 are of no apparent archaeological significance; however, clearance from tribal officials should be gained before any are altered. This applies especially to those sites which may be shrined (sites A2-2 and A8-1), as they may have and continue to have considerable significance to the area's inhabitants. The following is a complete list of recommendations for clearance:

<u>Area</u>	<u>Recommendation</u>
A1	It is recommended that archaeological clearance be granted provided all land altering activities near site A1-1 are avoided. Further, clearance from tribal officials should be gained before any of the historic sites documented are destroyed or altered.
A2	It is recommended that archaeological clearance be granted in area A2 provided tribal officials are contacted with respect to sites A2-1 and A2-2.

<u>Area</u>	<u>Recommendation</u>
A3	It is recommended that archaeological clearance be granted for all of area A3.
A4	It is recommended that archaeological clearance be granted for all of area A4.
A5	It is recommended that archaeological clearance be granted for all of area A5.
A6	It is recommended that archaeological clearance be granted for all of area A6.
A7	It is recommended that archaeological clearance be granted for all of area A7.
A8	It is recommended that archaeological clearance be granted provided tribal officials are contacted with respect to sites A8-1, 2, and 3.

An Additional Note on Historic Sites

There may be some question as to whether some of the historic sites documented in the survey are of Navajo or Pueblo origin. No truly diagnostic materials were encountered which shed light on this point. Admittedly the masonry style of these structures is not even remotely similar to that observable in the town of Paguate or even in some of the outlying buildings. However, all corrals in the region appear to have been constructed in the same way (crude, simple, coursed masonry without mortar) no matter what their associations were with pueblo towns or other structures. While it is generally conceded that both Navajos and Pueblos utilized the area, there is considerable confusion as to who did what, where, and to whom such structures may be attributed (Littel and Graham).

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